JOURNAL OF STRUCTURAL GEOLOGY

VOLUME 20, 1998

LIST OF CONTENTS
AND AUTHOR INDEX

Chief Editor
J. P. EVANS *Utah State University*

Associate Editors
T. G. BLENKINSOP *University of Zimbabwe, Harare*
D. M. FISHER *Pennsylvania State University*
R. J. LISLE *University of Wales, Cardiff*
R. J. NORRIS *University of Otago*
C. W. PASSCHIER *University of Mainz*
J. C. WHITE *University of New Brunswick*

Editor Emeritus
S. H. TREAGUS *University of Manchester*

PERGAMON

Journal of Structural Geology

Chief Editor J. P. EVANS

Editorial Assistant A. HOCHBERG

Department of Geology, Utah State University, 4506 Old Main Hill, Logan, UT 84322-4506, U.S.A.
(Voice Phone: 435 797 3544; Fax: 435 797 1588; E-mail: jsg@cc.usu.edu)

Associate Editors

T. G. BLENKINSOP
Department of Geology, University of Zimbabwe, PO Box MP167, Mount Pleasant, Harare, Zimbabwe

D. M. FISHER
Department of Geosciences, Pennsylvania State University, University Park, PA 16802, U.S.A.

R. J. LISLE
Department of Earth Sciences, University of Wales, Cardiff CF1 3YE, U.K.

R. J. NORRIS
Department of Geology, University of Otago, Dunedin, New Zealand

C. W. PASSCHIER
Department of Geology, University of Mainz, 55099 Mainz, Germany

J. C. WHITE
Department of Geology, University of New Brunswick, Fredericton, NB, Canada, E3B 5A3

Editor Emeritus

S. H. TREAGUS
Department of Earth Sciences, University of Manchester, Manchester M13 9PL, U.K.

Editorial Advisory Board

Founding Editor, P. L. Hancock, *Bristol, U.K.*

P. Bankwitz *Potsdam, Germany*	S. K. Ghosh *Calcutta, India*	W. D. Means *Albany, U.S.A.*	T. Shimamoto *Kyoto, Japan*
J. Behrmann *Freiburg, Germany*	L. Goodwin *Soccoro, U.S.A.*	G. Mitra *Rochester, U.S.A.*	R. H. Sibson *Dunedin, New Zealand*
K. Birkenmajer *Krakow, Poland*	P. Hennings *Dallas, U.S.A.*	J. P. Platt *London, U.K.*	C. Simpson *Boston, U.S.A.*
J.-L. Bouchez *Toulouse, France*	B. E. Hobbs *Melbourne, Australia*	B. van der Pluijm *Ann Arbor, U.S.A.*	H. Takagi *Tokyo, Japan*
J. Carreras *Barcelona, Spain*	P. J. Hudleston *Minneapolis, U.S.A.*	D. D. Pollard *Stanford, U.S.A.*	C. J. Talbot *Uppsala, Sweden*
P. R. Cobbold *Rennes, France*	J. A. Jackson *Cambridge, U.K.*	R. A. Price *Kingston, Canada*	J. Tullis *Providence, U.S.A.*
S. F. Cox *Callaghan, Australia*	A. K. Khudoley *St Petersburg, Russia*	V. A. Ramos *Buenos Aires, Argentina*	E. Willemse *Rijswijk, The Netherlands*
G. A. Davis *Los Angeles, U.S.A.*	G. S. Lister *Melbourne, Australia*	J. G. Ramsay *Issirac, France*	P. F. Williams *Fredericton, Canada*
C. Doglioni *Rome, Italy*	Ma Xingyuan *Beijing, China*	D. J. Sanderson *London, U.K.*	S. F. Wojtal *Oberlin, U.S.A.*

Publishing and Advertising Offices

Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, U.K. Tel.: (+1865) 843000. Fax: (+1865) 843010.

Published Monthly

Subscription Information

Annual Institutional Subscription Rates 1999: Europe, The CIS and Japan 2041.00 Dutch Guilders. All other countries U.S.$1036.00. Associated Personal Subscription Rates are available on request for those whose institutions are library subscribers. Dutch Guilder prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice. Any enquiry relating to subscriptions should be sent to: **The Americas:** Elsevier Science, Customer Support Department, P.O. Box 945, New York, NY 10010, U.S.A. [Tel.: (+1) 212-633-3730/1-888 4ES-INFO. Fax: (+1) 212-633-3680. E-mail: usinfo-f@elsevier.com]. **Japan:** Elsevier Science Customer Support Department, 9–15 Higashi-Azabu 1-chome, Minato-ku, Tokyo 106, Japan [Tel.: (+3) 5561-5033. Fax: (+3) 5561-5047. E-mail: info@elsevier.co.jp]. **Asia Pacific (*excluding Japan*):** Elsevier Science (Singapore) Pte Ltd, No. 1 Temasek Avenue, 17-01 Millenia Tower, Singapore 039192 [Tel.: (+65) 434-3727. Fax: (+65) 337-2230. E-mail: asiainfo@elsevier.com.sg]. **Rest of the World:** Elsevier Science Customer Service Department, P.O. Box 211, 1001 AE Amsterdam, The Netherlands [Tel.: (+31) 20-485-3757. Fax: (+31) 20-485-3432. E-mail: nlinfo-f@elsevier.nl]. For orders, claims, product enquiries (no manuscript enquiries) please contact the Customer Support Department at the Regional Sales Office nearest you.

Back Issues: Back issues of all previously published volumes are available direct from Elsevier Science Offices (Oxford and New York). Complete volumes and single issues can be purchased for 1993–1998. Earlier issues are available in high quality photo-duplicated copies as complete volumes only. Back volumes on microfilm are available from UMI, 300 North Zeeb Road, Ann Arbor, MI 48106, U.S.A.

© 1998 Elsevier Science Ltd. All rights reserved.

Periodicals postage paid at Rahway, NJ. *Journal of Structural Geology* (ISSN 0191–8141) is published monthly in one volume, by Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, U.K. The annual subscription in the U.S.A. is $936. *Journal of Structural Geology* is distributed by Mercury Airfreight International Ltd, 365 Blair Road, Avenel, NJ 07001, U.S.A. Postmaster: please send address corrections to *Journal of Structural Geology*, c/o Elsevier Science, RSO, Customer Support Department, 655 Avenue of the Americas, New York, NY 10010, U.S.A. [Tel.: (+1) 212-633-3730/1-888 4ES-INFO. Fax: (+1) 212-633-3680. E-mail: usinfo-f@elsevier.com].

Cover illustration: D_1-fold in alternating carbonate-pelite beds of the Neoproterozoic Zerrissene turbidite system, Ugab River Valley, Namibia. The folds are asymmetric with parasitic folds in the steep limbs. A late fault transects the core of the structure. Photograph Cees Passchier, 1998.

CONTENTS OF VOLUME 20

NUMBER 1

	1	Editorial
J. A. CARTWRIGHT and C. S. MANSFIELD	3	Lateral displacement variation and lateral tip geometry of normal faults in the Canyonlands National Park, Utah
J. H. HARRIS and B. A. VAN DER PLUIJM	21	Relative timing of calcite twinning strain and fold–thrust belt development; Hudson Valley fold–thrust belt, New York, U.S.A.
O. AVERBUCH and J.-L. MANSY	33	The 'Basse-Normandie' duplex (Boulonnais, N France): evidence for an out-of-sequence thrusting overprint
S. LACROIX, E. W. SAWYER and E. H. CHOWN	43	Pluton emplacement within an extensional transfer zone during dextral strike-slip faulting: an example from the late Archaean Abitibi Greenstone Belt
J. KRAUS and P. F. WILLIAMS	61	Relationships between foliation development, porphyroblast growth and large-scale folding in a metaturbidite suite, Snow Lake, Canada
R. WEIJERMARS	77	Taylor-mill analogues for patterns of flow and deformation in rocks
A. LUDMAN	93	Evolution of a transcurrent fault system in shallow crustal metasedimentary rocks: the Norumbega fault zone, eastern Maine
	109	Book Review
	I	International Newsletter 15: January 1998

NUMBER 2-3

Special Issue: Structures and Properties of High Strain Zones in Rocks

	v	Preface
D. ROBERTS	111	High-strain zones from meso- to macro-scale at different structural levels, Central Norwegian Caledonides
P. CONTI, A. FUNEDDA and N. CERBAI	121	Mylonite development in the Hercynian basement of Sardinia (Italy)
A. GUERMANI and G. PENNACCHIONI	135	Brittle precursors of plastic deformation in a granite: an example from the Mont Blanc massif (Helvetic, western Alps)
B. A. MARMO and C. J. L. WILSON	149	Strain localisation and incremental deformation within ice masses, Framnes Mountains, east Antarctica
T. KENKMANN and G. DRESEN	163	Stress gradients around porphyroclasts: palaeopiezometric estimates and numerical modelling

J. F. HIPPERTT 175 Breakdown of feldspar, volume gain and lateral mass transfer during mylonitization of granitoid in a low metamorphic grade shear zone

D. JIN, S.-I. KARATO and M. OBATA 195 Mechanisms of shear localization in the continental lithosphere: inference from the deformation microstructures of peridotites from the Ivrea zone, northwestern Italy

M. BROWN and G. S. SOLAR 211 Shear-zone systems and melts: feedback relations and self-organization in orogenic belts

A. F. M. KISTERS, R. L. GIBSON, E. G. CHARLESWORTH and C. R. ANHAEUSSER 229 The role of strain localization in the segregation and ascent of anatectic melts, Namaqualand, South Africa

E. H. RUTTER 243 Use of extension testing to investigate the influence of finite strain on the rheological behaviour of marble

M. CASEY, K. KUNZE and D. L. OLGAARD 255 Texture of Solnhofen limestone deformed to high strains in torsion

M. TAKAHASHI, H. NAGAHAMA, T. MASUDA and A. FUJIMURA 269 Fractal analysis of experimentally, dynamically recrystallized quartz grains and its possible application as a strain rate meter

L. BURLINI, D. MARQUER, N. CHALLANDES, S. MAZZOLA and N. ZANGARINI 277 Seismic properties of highly strained marbles from the Splügenpass, central Alps

J. KHAZANEHDARI, E. H. RUTTER, M. CASEY and L. BURLINI 293 The role of crystallographic fabric in the generation of seismic anisotropy and reflectivity of high strain zones in calcite rocks

M. GERBAULT, A. N. B. POLIAKOV and M. DAIGNIERES 301 Prediction of faulting from the theories of elasticity and plasticity: what are the limits?

NUMBER 4

H. KOYI 321 The shaping of salt diapirs

E. NOVOA, V. MOUNT and J. SUPPE 339 Map-view interference of monoclinal folds

D. A. FERRILL, A. P. MORRIS, S. M. JONES and J. A. STAMATAKOS 355 Extensional layer-parallel shear and normal faulting

J. WATTERSON, A. NICOL, J. J. WALSH and D. MEIER 363 Strains at the intersections of synchronous conjugate normal faults

M. MUKUL 371 A spatial statistics approach to the quantification of finite strain variation in penetratively deformed thrust sheets: an example from the Sheeprock Thrust Sheet, Sevier Fold-and-Thrust belt, Utah

M. MUKUL and G. MITRA 385 Finite strain and strain variation analysis in the Sheeprock Thrust Sheet: an internal thrust sheet in the Provo salient of the Sevier Fold-and-Thrust belt, Central Utah

M.-A. GUTSCHER, N. KUKOWSKI, J. MALAVIEILLE and S. LALLEMAND 407 Material transfer in accretionary wedges from analysis of a systematic series of analog experiments

T. TAKESHITA and I. HARA 417 *c*-Axis fabrics and microstructures in a recrystallized quartz vein deformed under fluid-rich greenschist conditions

J. F. HIPPERTT and A. J. MASSUCATTO 433 Phyllonitization and development of kilometer-size extension gashes in a continental-scale strike-slip shear zone, north Goiás, central Brazil

M. JULIVERT and J. SOLDEVILA 447 Small-scale structures formed during progressive shortening and subsequent collapse in the Navia–Alto Sil slate belt (Hercynian fold belt, NW Spain)

D. I. SCHOFIELD and R. S. D'LEMOS 459 Relationships between syn-tectonic granite fabrics and regional PTtd paths: an example from the Gander–Avalon boundary of NE Newfoundland

W. C. BELFIELD 473 Incorporating spatial distribution into stochastic modelling of fractures: multifractals and Lévy-stable statistics

Brevia

D. C. P. PEACOCK, G. JONES, R. J. KNIPE, E. MCALLISTER and D. J. SANDERSON 487 Large lateral ramps in the Eocene Valkyr shear zone: extensional ductile faulting controlled by plutonism in southern British Columbia: Discussion

P. S. SIMONY and S. D. CARR 489 Large lateral ramps in the Eocene Valkyr shear zone: extensional ductile faulting controlled by plutonism in southern British Columbia: Reply

NUMBER 5

T. L. PATTON and R. C. FLETCHER 491 A rheological model for fractured rock

F. NIÑO, H. PHILIP and J. CHÉRY 503 The role of bed-parallel slip in the formation of blind thrust faults

A. K. DUBEY and S. S. BHAKUNI 517 Hangingwall bed rotation and the development of contractional and extensional structures around a thrust fault: geometric and experimental models

L. LONERGAN, J. CARTWRIGHT and R. JOLLY 529 The geometry of polygonal fault systems in Tertiary mudrocks of the North Sea

J.-J. HOU, M.-K. HAN, B.-L. CHAI and H.-Y. HAN 549 Geomorphological observations of active faults in the epicentral region of the Huaxian large earthquake in 1556 in Shaanxi Province, China

H.-R. WENK 559 Deformation of mylonites in Palm Canyon, California, based on xenolith geometry

S. SENO, G. DALLAGIOVANNA and M. VANOSSI 573 From finite strain data to strain history: a model for a sector of the Ligurian Alps, Italy

D. SAHA 587 Local volume change vs overall volume constancy during crenulation cleavage development in low grade rocks

H. J. KISCH 601 Criteria for incipient slaty and crenulation cleavage development in Tertiary flysch of the Helvetic zone of the Swiss Alps

C. MONACO, L. TORTORICI and W. PALTRINIERI 617 Structural evolution of the Lucanian Apennines, southern Italy

J. S. DAVIS, S. M. ROESKE and S. M. KARL 639 Late Cretaceous to Early Tertiary transtension and strain partitioning in the Chugach accretionary complex, SE Alaska

Brevia
R. H. SIBSON — 655 Brittle failure mode plots for compressional and extensional tectonic regimes

NUMBER 6

B. TIKOFF and K. PETERSON — 661 Physical experiments of transpressional folding

D. GRUJIC and N. S. MANCKTELOW — 673 Melt-bearing shear zones: analogue experiments and comparison with examples from southern Madagascar

M. HERWEGH and M. R. HANDY — 681 The origin of shape preferred orientations in mylonite: inferences from *in-situ* experiments on polycrystalline norcamphor

R. HEILBRONNER and D. BRUHN — 695 The influence of three-dimensional grain size distributions on the rheology of polyphase rocks

S. G. DAVIDSON, D. J. ANASTASIO, G. E. BEBOUT, J. E. HOLL and C. A. HEDLUND — 707 Volume loss and metasomatism during cleavage formation in carbonate rocks

O. T. TOBISCH and Q. WILLIAMS — 727 Use of microgranitoid enclaves as solid state strain markers in deformed granitic rock: an evaluation

S. S. BOETTCHER and S. MOSHER — 745 Mid- to Late Cretaceous ductile deformation and thermal evolution of the crust in the northern Dome Rock Mountains, Arizona

H. FOSSEN and W. J. DUNLAP — 765 Timing and kinematics of Caledonian thrusting and extensional collapse, southern Norway: evidence from $^{40}Ar/^{39}Ar$ thermochronology

H. LONKA, K. SCHULMANN and Z. VENERA — 783 Ductile deformation of tonalite in the Suomusjärvi shear zone, south-western Finland

X. WANG and F. NEUBAUER — 799 Orogen-parallel strike-slip faults bordering metamorphic core complexes: the Salzach–Enns fault zone in the Eastern Alps, Austria

Brevia
W. J. DUNLAP — 819 The tectonic significance of a porphyroblastic blueschist facies overprint during Alpine orogenesis: Sifnos, Aegean Sea, Greece: Discussion

G. S. LISTER — 823 The tectonic significance of a porphyroblastic blueschist facies overprint during Alpine orogenesis: Sifnos, Aegean Sea, Greece: Reply

NUMBER 7

L. E. ARLEGUI-CRESPO and J. L. SIMON-GOMEZ — 827 Reliability of palaeostress analysis from fault striations in near multidirectional extension stress fields. Example from the Ebro Basin, Spain

S. U. JANECKE, C. J. VANDENBURG and J. J. BLANKENAU — 841 Geometry, mechanisms and significance of extensional folds from examples in the Rocky Mountain Basin and Range province, U.S.A.

J.-L. MUGNIER, B. DELCAILLAU, P. HUYGHE and P. LETURMY — 857 The break-back thrust splay of the Main Dun Thrust (Himalayas of western Nepal): evidence of an intermediate displacement scale between earthquake slip and finite geometry of thrust systems

B. SERONT, T.-F. WONG, J. S. CAINE, C. B. FORSTER, R. L. BRUHN and J. T. FREDRICH — 865 Laboratory characterization of hydromechanical properties of a seismogenic normal fault system

K. A. KLEPEIS, M. L. CRAWFORD and G. GEHRELS — 883 Structural history of the crustal-scale Coast shear zone north of Portland Canal, southeast Alaska and British Columbia

E. DRUGUET and D. H. W. HUTTON — 905 Syntectonic anatexis and magmatism in a mid-crustal transpressional shear zone: an example from the Hercynian rocks of the eastern Pyrenees

P. W. TRIMBY, D. J. PRIOR and J. WHEELER — 917 Grain boundary hierarchy development in a quartz mylonite

V. GRÉGOIRE, J. DARROZES, P. GAILLOT, A. NÉDÉLEC and P. LAUNEAU — 937 Magnetite grain shape fabric and distribution anisotropy vs rock magnetic fabric: a three-dimensional case study

B. LAFRANCE, B. E. JOHN and B. R. FROST — 945 Ultra high-temperature and subsolidus shear zones: examples from the Poe Mountain anorthosite, Wyoming

W. M. SCHWERDTNER — 957 Graphic derivation of the local sense of shear strain components in stretched walls of lithotectonic boundaries

R. J. LISLE — 969 Simple graphical constructions for the direction of shear

Brevia

D. JIANG — 975 Forward modeling of non-steady-state deformations and the 'minimum strain path': Discussion

H. FOSSEN and B. TIKOFF — 979 Forward modeling of non-steady-state deformations and the 'minimum strain path': Reply

1 International Newsletter 16: July 1998

NUMBER 8

P. A. COWIE and Z. K. SHIPTON — 983 Fault tip displacement gradients and process zone dimensions

B. SAINT BEZAR, D. FRIZON de LAMOTTE, J. L. MOREL and E. MERCIER — 999 Kinematics of large scale tip line folds from the High Atlas thrust belt, Morocco

A. J. BOLTON, A. J. MALTMAN and M. B. CLENNELL — 1013 The importance of overpressure timing and permeability evolution in fine-grained sediments undergoing shear

P. A. CAMILLERI — 1023 Prograde metamorphism, strain evolution, and collapse of footwalls of thick thrust sheets: a case study from the Mesozoic Sevier hinterland U.S.A.

C. J. LEWIS and J. M. STOCK — 1043 Late Miocene to Recent transtensional tectonics in the Sierra San Fermín, northeastern Baja California, Mexico

C. M. ONASCH, B. SHEN-TU and B. A. COUZENS-SCHULTZ — 1065 Strain partitioning and factorization in a quartz arenite

P. A. COWIE 1075 A healing–reloading feedback control on the growth rate of seismogenic faults

X.-Y. YANG, K. D. O'HARA and D. P. MOECHER 1089 Distinction between tectonic mixing and mass transfer processes in a ductile shear zone

D. JIANG and P. F. WILLIAMS 1105 High-strain zones: a unified model

C. W. PASSCHIER 1121 Monoclinic model shear zones

1139 Book reviews

NUMBER 9–10

Special Issue: Extraction, Transport and Emplacement of Granitic Magmas

K. BENN, E. W. SAWYER and A. R. CRUDEN v Preface

J. F. DEHLS, A. R. CRUDEN and J.-L. VIGNERESSE 1145 Fracture control of late Archean pluton emplacement in the northern Slave Province, Canada

J. P. HOGAN, J. D. PRICE and M. C. GILBERT 1155 Magma traps and driving pressure: consequences for pluton shape and emplacement in an extensional regime

J.-Y. ROIG, M. FAURE and C. TRUFFERT 1169 Folding and granite emplacement inferred from structural, strain, TEM and gravimetric analyses: the case study of the Tulle antiform, SW French Massif Central

L. CORRIVEAU, B. RIVARD and O. VAN BREEMEN 1191 Rheological controls on Grenvillian intrusive suites: implications for tectonic analysis

A. S. YOSHINOBU, D. A. OKAYA and S. R. PATERSON 1205 Modeling the thermal evolution of fault-controlled magma emplacement models: implications for the solidification of granitoid plutons

A. CASTRO and C. FERNÁNDEZ 1219 Granite intrusion by externally induced growth and deformation of the magma reservoir, the example of the Plasenzuela pluton, Spain

G. GLEIZES, D. LEBLANC, V. SANTANA, P. OLIVIER and J. L. BOUCHEZ 1229 Sigmoidal structures featuring dextral shear during emplacement of the Hercynian granite complex of Cauterets–Panticosa (Pyrenees)

K. BENN, N. M. HAM, G. S. PIGNOTTA and W. BLEEKER 1247 Emplacement and deformation of granites during transpression: magnetic fabrics of the Archean Sparrow pluton, Slave Province, Canada

S. R. PATERSON and R. B. MILLER 1261 Stoped blocks in plutons: paleo-plumb bobs, viscometers, or chronometers?

R. A. WIEBE and W. J. COLLINS 1273 Depositional features and stratigraphic sections in granitic plutons: implications for the emplacement and crystallization of granitic magma

R. EVERITT, A. BROWN, R. EJECKAM, R. SIKORSKY and D. WOODCOCK 1291 Lithostructural layering within the Archean Lac du Bonnet Batholith, at AECL's Underground Research Laboratory, Southeastern Manitoba

D. B. CLARKE and G. K. C. CLARKE 1305 Layered granodiorites at Chebucto Head, South Mountain batholith, Nova Scotia

D. B. CLARKE, A. S. HENRY and M. A. WHITE 1325 Exploding xenoliths and the absence of 'elephants' graveyards' in granite batholiths

S. R. PATERSON and R. B. MILLER 1345 Mid-crustal magmatic sheets in the Cascades Mountains, Washington: implications for magma ascent

M. BROWN and G. S. SOLAR 1365 Granite ascent and emplacement during contractional deformation in convergent orogens

D. R. BAKER 1395 Granitic melt viscosity and dike formation

W. J. COLLINS, M. J. VAN KRANENDONK and C. TEYSSIER 1405 Partial convective overturn of Archaean crust in the east Pilbara Craton, Western Australia: driving mechanisms and tectonic implications

N. PETFORD and M. A. KOENDERS 1425 Self-organisation and fracture connectivity in rapidly heated continental crust

NUMBER 11

J. F. HIPPERTT and F. D. HONGN 1435 Deformation mechanisms in the mylonite/ultramylonite transition

J. V. SMITH 1449 Dilatancy fabrics in conglomerates in the Awatere fault zone, New Zealand

J. BÜRGISSER and M. FORD 1455 Overthrust shear deformation of a foreland basin; structural studies south-east of the Pelvoux massif, SE France

P. G. KELLY, D. J. SANDERSON and D. C. P. PEACOCK 1477 Linkage and evolution of conjugate strike-slip fault zones in limestones of Somerset and Northumbria

S. JI and K. SARUWATARI 1495 A revised model for the relationship between joint spacing and layer thickness

S. JOY and D. SAHA 1509 Influence of micaceous impurity on dynamically recrystallized quartz *c*-axis fabric in *L–S tectonites from the Singhbhum Shear Zone and its footwall, Eastern India*

S. E. JOHNSON and M. L. WILLIAMS 1521 Determining finite longitudinal strains from oppositely-concave microfolds in and around porphyroblasts: a new quantitative method

C. M. LÜNEBURG and H. D. W. LEBIT 1531 The development of a single cleavage in an area of repeated folding

M. TAGAMI and T. TAKESHITA 1549 *c*-Axis fabrics and microstructures in quartz schist from the Sambagawa metamorphic belt, central Shikoku, Japan

Y.-T. TAKEDA 1569 Flow in rocks modelled as multiphase continua: application to polymineralic rocks

D. C. SRIVASTAVA, R. J. LISLE, M. IMRAN and R. KANDPAL 1579 The kink-band triangle: a triangular plot for paleostress analysis from kink-bands

Brevia

M. BULNES and J. POBLET 1587 Detachment folds with fixed hinges and variable detachment depth, northeastern Brooks Range, Alaska: Discussion

W. K. WALLACE and T. X. HOMZA 1591 Detachment folds with fixed hinges and variable detachment depth, northeastern Brooks Range, Alaska: Reply

NUMBER 12

P. ZWEIGEL	1597	Arcuate accretionary wedge formation at convex plate margin corners: results of sandbox analogue experiments
J. LIU and G. RANALLI	1611	Stresses and velocities in orogenic wedges with power-law rheology and linearly varying longitudinal strain rate
P. T. NGUYEN, S. F. COX, L. B. HARRIS and C. McA. POWELL	1625	Fault-valve behaviour in optimally oriented shear zones: an example at the Revenge gold mine, Kambalda, Western Australia
K. D. RAWNSLEY, D. C. P. PEACOCK, T. RIVES and J.-P. PETIT	1641	Joints in the Mesozoic sediments around the Bristol Channel Basin
R. J. H. JOLLY, J. W. COSGROVE and D. N. DEWHURST	1663	Thickness and spatial distributions of clastic dykes, northwest Sacramento Valley, California
S. D. McKINNON and I. G. de la BARRA	1673	Fracture initiation, growth and effect on stress field: a numerical investigation
D. R. GRAY and D. A. FOSTER	1691	Character and kinematics of faults within the turbidite-dominated Lachlan Orogen: implications for tectonic evolution of eastern Australia
M. SANDIFORD, E. PAUL and T. FLOTTMANN	1721	Sedimentary thickness variations and deformation intensity during basin inversion in the Flinders Ranges, South Australia
L. CRISPINI and M.-L. FREZZOTTI	1733	Fluid inclusion evidence for progressive folding during decompression in metasediments of the Voltri Group (Western Alps, Italy)
C. J. VANDENBURG, S. U. JANECKE and W. C. McINTOSH	1747	Three-dimensional strain produced by >50 My of episodic extension, Horse Prairie basin area, SW Montana, U.S.A.
A. GOLDSTEIN, J. KNIGHT and K. KIMBALL	1769	Deformed graptolites, finite strain and volume loss during cleavage formation in rocks of the taconic slate belt, New York and Vermont, U.S.A.
A. D. KERR and D. D. POLLARD	1783	Toward more realistic formulations for the analysis of laccoliths
Brevia		
B. TIKOFF, C. TEYSSIER and M. DE SAINT BLANQUAT	1795	Nucleation, growth and structural development of mylonitic shear zones in granitic rocks: Discussion
P. P. CHRISTIANSEN and D. D. POLLARD	1801	Nucleation, growth and structural development of mylonitic shear zones in granitic rocks: Reply